IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Thomas R. Firman   Art Unit : Unknown
Serial No. :   Examiner : Unknown
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Title   : AUTOMATIC ASSEMBLY OF VOICE CONTROL INFORMATION

Commissioner for Patents
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Preliminarily, kindly amend the claims as follows:

Cancel claims 1-3 without prejudice and insert the following new claims:

--5. A method of generating a table for aiding conversion of voiced utterances to control commands for use in controlling an operating system of a computer to achieve desired actions in an application program running under the operating system, said application program including menus and control buttons, said method comprising

   automatically by computer parsing an application program to identify menu entries and control buttons, and

   automatically by computer placing a table entry in said table for each menu entry and control button found in the application program, each table entry placed in said table containing one of said control commands corresponding to said menu entry or control button.

6. A voice user interface system for producing input to a computer, said computer having a display, said display having a pointer indicating a position on said display, and a program for execution on said computer, a state of said program comprising a configuration on said display, said configuration being associated with control of said program, the system comprising

a voice recognizer for recognizing a voiced utterance and for providing corresponding signals as input to said computer, and

a converter for converting said voiced utterance into a command string including a command directing motion of said pointer relative to said configuration

7. The system of claim 6 wherein said command string further comprises a command to said program.

8. A voice user interface system for recognizing a voiced utterance and producing corresponding input to a program for execution on a computer, comprising

a voice recognizer for recognizing a voiced utterance and for providing a corresponding signal as an input to said computer, and

a converter for converting said voiced utterance to an output string for delivery as input to said computer based on an evaluation of said voiced utterance and on a state of the subsystem comprising said voice recognizer and said converter.

9. A voice user interface system for recognizing a voiced utterance and producing corresponding input to a program for execution on a computer, comprising

a voice recognizer for recognizing a voiced utterance and for providing a corresponding signal as an input to said computer, and

a converter for converting said voiced utterance to an output string for delivery as input

to said computer based on an evaluation of said voiced utterance and on a state of said program.

10. The system of claim 9 further comprising commands to said program having a

format to carry associated text strings as arguments, further comprising means for converting a

series of voiced utterances into commands with said associated text as output of said device.

11. The system of claim 9 wherein said program, when operated without said converter,

offers to its user, menu selections that said user selects via keyboard input, and wherein said

converter, when used to select the same menu selection based on a voiced utterance, produces a

series of operating system events in response to said keyboard input.

12. The system of claim 9 wherein said operating system of said computer maintains an

event queue, said converter delivering said output string to said event queue.

13. A system for enabling voiced utterances to be substituted for manipulation of a

pointing device to control motion of a displayed location indicator on a computer display,

the indicator being moved by an operating system in a computer in response to control

signals received from the pointing device, comprising

a voice recognizer for recognizing a voiced utterance, and

an interpreter functionally connected to said voice recognizer for converting a voiced

utterance into control signals which will cause movement of the indicator in a desired direction

aided by the operating system in the computer, said movement continuing unabated until stopped

by an action of the user.

14. A voice user interface device comprising

means for converting a voiced utterance into a corresponding signal as an input to a computer,

means for converting a voiced utterance as either one to be converted to said signal or as one to be converted to said command.

15. A voice user interface system for recognizing a voiced utterance and producing corresponding input to a program for execution on a computer, comprising

a voice recognizer for recognizing said voiced utterance,

a converter for converting said recognized voiced utterance to an output string of characters or commands for input to said computer,

a set of representations, one such representation for each voiced utterance recognized by said voice recognizer, said representations internal to said voice recognizer and said converter,

a set of output strings produced by said voice recognizer and said converter as input to said program, and

a mapping from a member of said set of internal representations to a member of said set of output strings, said mapping being multiple-to-one and being used by said converter.

16. A method that is at least partially automated, comprising

assembling a table of entries, each of the entries including an utterable token, and program control information to be invoked in response to uttering of the token.

17. The method of claim 16 wherein the tokens are arranged hierarchically in the table.

18. The method of claim 16 wherein the tokens comprise names that are displayed in a user interface.

19. The method of claim 18 wherein the names comprise menu items, button captions, or words.

20. The method of claim 16 wherein the program control information comprises sequences of instructions corresponding to each of the tokens.

21. The method of claim 20 wherein the sequences of instructions are command strings in the form of events to be entered into an event queue of an operating system.

22. The method of claim 16 wherein the sequence of instructions corresponding to a given token is the sequence of instructions that is executed by the program when the corresponding token is invoked by the user via a user interface.

23. The method of claim 16 wherein the assembling comprises

automatically analyzing program instructions to identify tokens for inclusion in the table.

24. The method of claim 17 wherein the analyzing comprises

identifying user interface names that appear in the program instructions.

25. The method of claim 16 wherein the assembling comprises

automatically analyzing the program instructions to identify program control

information for inclusion in the table.

26. The method of claim 25 wherein the analyzing comprises

identifying command strings associated with the tokens.

27. The method of claim 16 wherein the assembling comprises

automatically analyzing text to identify individual words for inclusion in the table.

28. The method of claim 16 wherein the assembling comprises recording a series of

actions taken by a user in using a program.

29. The method of claim 16 wherein the actions include pointer operations and

keystrokes.

30. A method that is at least partially automated, comprising

assembling a table of entries, each of the entries including an utterable menu item

or button caption that is displayable in a user interface, and command strings that correspond to

the menu items and button captions, the command strings to be invoked in response to uttering of

the items or captions.

31. A stored digital data structure comprising

a table of entries, each of the entries including an utterable token and program

control information to be invoked in response to uttering of the token.

32. A stored program comprising

an instruction sequence, the execution of which assembles a table of entries each

of the entries including an utterable token and program control information to be invoked in

response to uttering of the token.

33. A voice controlled device comprising

a processor, and

a stored instruction sequence, the execution of which by the processor assembles

a table or entries, each of the entries including an utterable token and program control

information to be invoked in response to uttering of the token.

34. A voice control method comprising

executing a program having a user interface that displays invocable tokens

associated by the program with respective instruction sequences in the program, and

in response to an utterance corresponding to a selected one of the tokens,

executing one of the instruction sequences that differs from the instruction sequence associated

by the program with the selected one of the tokens.--

Please apply any other charges or credits to Deposit Account No. 06-1050, reference 10591-008001.

Respectfully submitted,

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